



# **Comparison of Observed Rates of All Indicators between ICD-10-CM/PCS v2021 and v2022**

## **Prepared for:**

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## Introduction

The data presented in this document are comparisons of nationwide observed rates for all Quality Indicators™ (QIs) by module, comparing Agency for Healthcare Research and Quality (AHRQ) QI SAS® Software Version 2021 to Version 2022 for ICD-10-CM/PCS. The rates for v2021 and v2022 of the software are based on analysis States from AHRQ's 2019 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID).<sup>1</sup>

HCUP is a family of powerful health care databases, software tools, and products for advancing research. Sponsored by AHRQ, HCUP includes the largest all-payer encounter-level collection of longitudinal health care data (inpatient, ambulatory surgery, and emergency department) in the United States, beginning in 1988. HCUP is a Federal-State-Industry Partnership that brings together the data collection efforts of many organizations—such as State data organizations, hospital associations, private data organizations, and the Federal government—to create a national information resource.

The analytic dataset used to generate the tables in this document consists of the same hospital discharge records that comprise the reference population for Version 2022 of the AHRQ QI software. This reference population file was limited to community hospitals and also excludes rehabilitation and long-term acute care (LTAC) hospitals. Information on the type of hospital was obtained by the American Hospital Association (AHA) Annual Survey of Hospitals. The AHA defines community hospitals as “all non-Federal, short-term, general, and other specialty hospitals, excluding hospital units of institutions.” Included among community hospitals are specialty hospitals such as obstetrics-gynecology, ear-nose-throat, orthopedic, and pediatric institutions. Also included are public hospitals and academic medical centers.

The 2019 HCUP SID includes information on all inpatient discharges from hospitals in 48 participating states.<sup>2</sup>

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<sup>1</sup> Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID), 2019.

<sup>2</sup> The AHRQ QI program would like to acknowledge the HCUP Partner organizations that participated in the HCUP SID: Alaska State Hospital and Nursing Home Association, Alaska Department of Health and Social Services, Arizona Department of Health Services, Arkansas Department of Health, California Department of Health Care Access and Information, Colorado Hospital Association, Connecticut Hospital Association, Delaware Division of Public Health, District of Columbia Hospital Association, Florida Agency for Health Care Administration, Georgia Hospital Association, Hawaii Lauima Data Alliance, a non-profit subsidiary of the Healthcare Association of Hawaii, Hawaii University of Hawaii at Hilo, Illinois Department of Public Health, Indiana Hospital Association, Iowa Hospital Association, Kansas Hospital Association, Kentucky Cabinet for Health and Family Services, Louisiana Department of Health, Maine Health Data Organization, Maryland Health Services Cost Review Commission, Massachusetts Center for Health Information and Analysis, Michigan Health & Hospital Association, Minnesota Hospital Association (provides data for Minnesota and North Dakota), Mississippi State Department of Health, Missouri Hospital Industry Data Institute, Montana Hospital Association, Nebraska Hospital Association, Nevada Department of Health and Human Services, New Hampshire Department of Health & Human Services, New Jersey Department of Health, New Mexico Department of Health, New York State Department of Health, North Carolina Department of Health and Human Services, North Dakota (data provided by the Minnesota Hospital Association), Ohio Hospital Association, Oklahoma State Department of Health, Oregon Association of Hospitals

In 2019, 46 of the SID include indicators of the diagnoses being present on admission (POA)<sup>3</sup> and 42 included the PRDAY data element. Edit checks on POA were developed during an HCUP evaluation of POA coding in the 2011 SID at hospitals that were required to report POA to CMS. The edits identify general patterns of suspect reporting of POA. The edits do not evaluate whether a valid POA value (e.g., Y or N) is appropriate for the specific diagnosis. There are three hospital-level edit checks:

1. Indication that a hospital has POA reported as Y on all diagnoses on all discharges
2. Indication that a hospital has POA reported as missing on all non-Medicare discharges
3. Indication that a hospital reported POA as missing on all nonexempt diagnoses for 15 percent or more of discharges. The cut-point of 15 percent was determined by 2 times the standard deviation plus the mean of the percentage for hospitals that are required to report POA to Centers for Medicare & Medicaid Services (CMS).

Additional information on the reference population and the risk adjustment process may be found in Quality Indicator Empirical Methods, available on the AHRQ QI website

(<https://qualityindicators.ahrq.gov/modules/Default.aspx>).

The QI observed rates for hospital-level indicators are scaled to the rate per 1,000 persons at risk (discharges) and the area-level indicators are per 100,000 population. Observed rates are rounded to two significant digits. Ratios of observed rates are calculated prior to rounding and therefore are not always equal to the quotient of observed rates displayed. Volume and count indicator results are listed as simple counts with no scaling at all. Cell sizes less than 11 are suppressed due to confidentiality; and are designated by an asterisk (\*). When only one datapoint in a series must be suppressed due to cell sizes, another datapoint is provided as a range to disallow calculation of the masked variable. In some cases, numerators, denominators, or rates are not applicable for the category due to the exclusion criteria in the specification of the indicator and are designated by dashes (--).

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and Health Systems, Oregon Office of Health Analytics, Pennsylvania Health Care Cost Containment Council, Rhode Island Department of Health, South Carolina Revenue and Fiscal Affairs Office, South Dakota Association of Healthcare Organizations, Tennessee Hospital Association, Texas Department of State Health Services, Utah Department of Health, Vermont Association of Hospitals and Health Systems, Virginia Health Information, Washington State Department of Health, West Virginia Department of Health and Human Resources, Wisconsin Department of Health Services, Wyoming Hospital Association.

<sup>3</sup> States in the POA reference population for 2019 include: AK, AR, AZ, CA, CO, DC, FL, GA, HI, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, and WV.

## Tables

**Table 1. Prevention Quality Indicators (PQI) Comparison of Observed Rates: v2021 and v2022 for ICD-10-CM/PCS**

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 100,000	v2021 OBSERVED RATE PER 100,000
PQI 01	Diabetes Short-Term Complications Admission Rate	1.00	82.41	82.41
PQI 03	Diabetes Long-Term Complications Admission Rate	1.00	115.61	115.61
PQI 05	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate	1.00	359.43	359.43
PQI 07	Hypertension Admission Rate	1.00	62.55	62.55
PQI 08	Heart Failure Admission Rate	1.00	441.16	441.16
PQI 11	Community-Acquired Pneumonia Admission Rate	1.00	177.37	177.37
PQI 12	Urinary Tract Infection Admission Rate	1.00	130.20	130.20
PQI 14	Uncontrolled Diabetes Admission Rate	1.00	41.89	41.89
PQI 15	Asthma in Younger Adults Admission Rate	1.00	28.60	28.60
PQI 16	Lower-Extremity Amputation among Patients with Diabetes Rate	1.00	33.48	33.48
PQI 90	Prevention Quality Overall Composite	1.00	1,297.64	1,297.55
PQI 91	Prevention Quality Acute Composite	1.00	307.56	307.56
PQI 92	Prevention Quality Chronic Composite	1.00	990.18	990.08
PQI 93	Prevention Quality Diabetes Composite	1.00	254.24	254.24

Source: Results are calculated from the 2019 HCUP reference population using AHRQ QI software v2021 and v2022.

Note: The 2000-2021\_Population\_Files\_V2022.txt Census population file was used in generating PQI observed rates.

**Table 2. Patient Safety Indicators (PSI) Comparison of Observed Rates: v2021 and v2022 for ICD-10-CM/PCS**

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 1,000	v2021 OBSERVED RATE PER 1,000
PSI 02	Death Rate in Low-Mortality Diagnosis Related Groups (DRGs)	0.90	0.42	0.47
PSI 03	Pressure Ulcer Rate	1.00	0.60	0.60
PSI 04	Death Rate among Surgical Inpatients with Serious Treatable Complications	1.00	140.52	140.03
PSI 04_DVT_PE	Death Rate Among Surgical Inpatients with Serious Treatable Complications Stratum: Deep Vein Thrombosis/Pulmonary Embolism (DVT/PE)	0.99	40.44	40.68
PSI 04_PNEUMONIA	Death Rate Among Surgical Inpatients with Serious Treatable Complications Stratum: Pneumonia	1.01	90.16	89.70
PSI 04_SEPSIS	Death Rate Among Surgical Inpatients with Serious Treatable Complications Stratum: Sepsis	1.00	211.12	210.34
PSI 04_SHOCK	Death Rate Among Surgical Inpatients with Serious Treatable Complications Stratum: Shock/Cardiac Arrest	1.00	282.89	283.03
PSI 04_GIHEMORRHAGE	Death Rate Among Surgical Inpatients with Serious Treatable Complications Stratum: Gastrointestinal (GI) Hemorrhage/Acute Ulcer	1.01	82.70	81.95
PSI 05 <sup>a</sup>	Retained Surgical Item or Unretrieved Device Fragment Count	0.95	597	629
PSI 06	Iatrogenic Pneumothorax Rate	1.00	0.17	0.17
PSI 07	Central Venous Catheter-Related Blood Stream Infection Rate	1.00	0.09	0.09
PSI 08	In Hospital Fall with Hip Fracture Rate	1.00	0.07	0.07
PSI 09	Postoperative Hemorrhage or Hematoma Rate	1.01	2.25	2.22
PSI 10	Postoperative Acute Kidney Injury Requiring Dialysis Rate	1.00	0.90	0.91
PSI 11	Postoperative Respiratory Failure Rate	1.08	6.27	5.83

**Comparison of Observed Rates ICD-10-CM/PCS v2021 and v2022**

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 1,000	v2021 OBSERVED RATE PER 1,000
PSI 12	Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	0.99	3.23	3.27
PSI 13	Postoperative Sepsis Rate	0.99	3.91	3.95
PSI 14	Postoperative Wound Dehiscence Rate	1.78	1.58	0.89
PSI 14_OPEN	Postoperative Wound Dehiscence Rate Stratum: Open Approach	1.34	2.58	1.93
PSI 14_NONOPEN	Postoperative Wound Dehiscence Rate Stratum: Non-Open Approach	4.00	0.18	0.04
PSI 15	Abdominopelvic Accidental Puncture or Laceration Rate	0.99	0.97	0.98
PSI 17	Birth Trauma Rate – Injury to Neonate	1.00	4.60	4.60
PSI 18	Obstetric Trauma Rate – Vaginal Delivery with Instrument	1.00	117.23	117.23
PSI 19	Obstetric Trauma Rate – Vaginal Delivery without Instrument	1.00	17.48	17.48

Source: Results are calculated from the 2019 HCUP reference population using AHRQ QI software v2021 and v2022.

<sup>a</sup> PSI 05 Retained Surgical Item or Unretrieved Device Fragment Count is a count, not a rate. Therefore, the observed values for PSI 05 are counts.

Table 3. Inpatient Quality Indicators (IQI) Comparison of Observed Rates: v2021 and v2022 for ICD-10-CM/PCS

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 1,000	v2021 OBSERVED RATE PER 1,000
IQI 08	Esophageal Resection Mortality Rate	1.00	32.67	32.67
IQI 09	Pancreatic Resection Mortality Rate	1.00	25.75	25.75
IQI 09_WITH_CANCER	Pancreatic Resection Mortality Rate Stratum A: Presence of Pancreatic Cancer	1.00	22.69	22.69
IQI 09_WITHOUT_CANCER	Pancreatic Resection Mortality Rate Stratum B: Absence of Pancreatic Cancer	1.00	29.27	29.27
IQI 11	Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate	1.00	33.70	33.70
IQI 11_OPEN_RUPTURED	Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate Stratum: Open Repair of Ruptured AAA	1.00	377.99	377.99
IQI 11_OPEN_UNRUPTURED	Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate Stratum: Open Repair of Unruptured AAA	1.00	52.40	52.40
IQI 11_ENDO_RUPTURED	Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate Stratum: Endovascular Repair of Ruptured AAA	1.00	178.88	178.88
IQI 11_ENDO_UNRUPTURED	Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate Stratum: Endovascular Repair of Unruptured AAA	1.00	7.10	7.10
IQI 12	Coronary Artery Bypass Graft (CABG) Mortality Rate	1.00	23.27	23.27
IQI 15	Acute Myocardial Infarction (AMI) Mortality Rate	1.00	49.31	49.31
IQI 16	Heart Failure Mortality Rate	1.00	24.97	24.97
IQI 17	Acute Stroke Mortality Rate	1.00	66.56	66.56
IQI 17_HEMSTROKE_SUBARACH	Acute Stroke Mortality Rate Stratum: Subarachnoid Hemorrhage	1.00	195.71	195.71
IQI 17_HEMSTROKE_INTRACER	Acute Stroke Mortality Rate Stratum: Intracerebral Hemorrhage	1.00	185.59	185.59



## Comparison of Observed Rates ICD-10-CM/PCS v2021 and v2022

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 1,000	v2021 OBSERVED RATE PER 1,000
IQI 17_ISCHEMSTROKE	Acute Stroke Mortality Rate Stratum: Ischemic Stroke	1.00	38.14	38.14
IQI 18	Gastrointestinal Hemorrhage Mortality Rate	1.00	22.67	22.67
IQI 19	Hip Fracture Mortality Rate	1.00	18.59	18.59
IQI 20	Pneumonia Mortality Rate	1.00	42.73	42.73
IQI 21	Cesarean Delivery Rate, Uncomplicated	1.00	278.12	278.12
IQI 22	Vaginal Birth After Cesarean (VBAC) Delivery Rate, Uncomplicated	1.00	140.18	140.18
IQI 30	Percutaneous Coronary Intervention (PCI) Mortality Rate	1.00	29.99	29.99
IQI 31	Carotid Endarterectomy Mortality Rate	1.00	3.78	3.78
IQI 33	Primary Cesarean Delivery Rate, Uncomplicated	1.00	153.70	153.70

Source: Results are calculated from the 2019 HCUP reference population using AHRQ QI software v2021 and v2022.

**Table 4. Pediatric Quality Indicators (PDI) Comparison of Hospital-Level Observed Rates: v2021 and v2022 for ICD-10-CM/PCS**

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 1,000	v2021 OBSERVED RATE PER 1,000
NQI 03	Neonatal Blood Stream Infection Rate	1.00	20.23	20.25
PDI 01	Accidental Puncture or Laceration Rate	1.00	0.31	0.31
PDI 05	Iatrogenic Pneumothorax Rate	0.90	0.05	0.06
PDI 08	Postoperative Hemorrhage or Hematoma Rate	1.00	2.81	2.81
PDI 09	Postoperative Respiratory Failure Rate	1.02	26.48	25.88
PDI 10	Postoperative Sepsis Rate	1.00	8.80	8.81
PDI 12	Central Venous Catheter-Related Blood Stream Infection Rate	1.00	0.43	0.43

Source: Results are calculated from the 2019 HCUP reference population using AHRQ QI software v2021 and v2022.

**Table 5. Pediatric Quality Indicators (PDI) Comparison of Area-Level Observed Rates: v2021 and v2022 for ICD-10-CM/PCS**

INDICATOR	LABEL	RATIO OF OBSERVED RATES (v2022/v2021)	v2022 OBSERVED RATE PER 100,000	v2021 OBSERVED RATE PER 100,000
PDI 14	Asthma Admission Rate	1.00	68.18	68.18
PDI 15	Diabetes Short-Term Complications Admission Rate	1.00	26.49	26.49
PDI 16	Gastroenteritis Admission Rate	1.00	33.53	33.53
PDI 18	Urinary Tract Infection Admission Rate	1.00	17.68	17.68
PDI 90	Pediatric Quality Overall Composite	1.00	98.96	98.96
PDI 91	Pediatric Quality Acute Composite	1.00	25.18	25.18
PDI 92	Pediatric Quality Chronic Composite	1.00	73.78	73.78

Source: Results are calculated from the 2019 HCUP reference population using AHRQ QI software v2021 and v2022.

Note: The 2000-2021\_Population\_Files\_V2022.txt Census population file was used in generating area-level PDI observed rates.